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ABSTRACT

For each of two years, 50 Hispanic and Black eighth graders were selected for a field-based, environmental science summer program designed to nurture math and science talent and encourage bright, minority youth to persist in school. Students were selected on the basis of participation in an outreach program, essays, grades, recommendations, and an interview. Inventories, career plots, and thematic analysis of their 28 daily journal entries, interviews of camp directors, and staff evaluations provide rich descriptions of participants' perceptions regarding needs and development. Aspirations, challenges, involvement in their instruction and personal caring by significant adults as the students engaged in camp instruction and living activities are articulated. Interpretation is grounded in Bueschler's concept of adolescent development as volatile change spheres of biological maturation, learning processes, and social needs, made more complex by ability potential. Cultural identity formation is proposed as a volatile change sphere, and the metaphor of juggling spheres is used to discuss the complexity of nurturing giftedness for minority adolescents. The report compares gifted adolescent needs to general adolescent needs, describes the influences of different cultures on giftedness, and provides suggestions for ways adults may help gifted minority adolescents most effectively. (Contains 31 references.) (Author/CR)

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NURTURING GIFTEDNESS WHILE MINORITY ADOLESCENTS JUGGLE CHANGE SPHERES

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Abstract

For each of two years, fifty Hispanic and Black eighth graders were selected for a field-based, environmental science summer program designed to nurture math and science talent and encourage bright, minority youth to persist in school. Inventories, career plots and thematic analysis of their 28 daily journal entries, interviews of camp directors, and staff evaluation provide rich descriptions of participants' perceptions regarding needs and development. Aspirations, challenge, involvement in their instruction and personal caring by significant adults as they engaged in camp instruction and living activities are articulated. Interpretation is grounded in Buescher's concept of adolescent development as volatile change spheres of biological maturation, learning processes, and social needs, made more complex by ability potential. Cultural identity formation is proposed as yet another volatile change sphere and the metaphor of juggling these spheres further clarifies the complexity of nurturing giftedness for minority adolescents.

Nurturing Giftedness While Minority Adolescents Juggle Change Spheres

The image of “**spheres of change** . . . interacting [sic] with increasing potency” (Buescher, 1985, p.12) during the years of adolescent maturation has tremendous implicit and visual appeal as we seek to understand the complexity of developmental tasks adolescents face, especially gifted adolescents. Buescher points out that simply managing each of the three most basic systems of development, that is, biological maturation, changes in the learning process, and shifts in psychosocial demands, present sufficient challenge to the individual youth “without adding into the mixture critical features like exceptional ability, uniquely creative perspectives, or idiosyncratic ways of learning or behaving that are characteristic of the gifted!” (Buescher, 1985, p.12). We suggest that for gifted *minority* adolescents, the ecological task of cultural identification and acculturation adds to the complexity, particularly so for those youth who are part of an involuntary minority culture (Ogbu, 1992). Thus, we see that not four but five spheres of change must be addressed by gifted minority youth during adolescence, that six or seven year period of transformation from childhood to young adulthood.

We propose to add the metaphor of **juggling** to the image of spheres in order to further our understanding of the dynamic nature and complexity of this task. Attending to these spheres of change is a task that for all adolescents involves vacillating between (a) the significant biological changes involved in puberty, (b) changes in thinking and learning imposed by cognitive maturation and schooling expectations, and (c) changes in relationships within family, between peers, and with the larger society. For gifted adolescents with minority status, responsiveness by self and others to one’s exceptionality, and changing perceptions of self and others to one’s cultural identification and accultural adaptations present additional spheres to juggle. The informative power derived from this systemic perspective of interacting systems becomes even greater when we consider the volatility *within*

each system along with the interactions that inevitably must take place *between* the systems.

Information and insights gathered for each of two years from the individual journals of the participants of Camp Planet Earth (CPE), a field-based environmental science summer program for bright Hispanic and Black eighth graders, provide the core of data to illuminate this concept of systemic change. Interviews of camp staff and retrospective analysis of the events and outcomes of CPE have added rich insights about the task of nurturing giftedness while the adolescents juggle their change spheres. Some of this data will be presented in this paper, along with suggestions for how adults might help gifted minority adolescents most effectively. The findings and interpretations, grounded in Buescher's concept of change spheres and our metaphor of juggling these spheres, contributes, we propose, to a more sensitive understanding of the when, how, and why of nurturing giftedness among adolescents from minority cultures during the especially volatile years of adolescence.

General Adolescent Needs vs. Gifted Adolescent Needs

The developmental needs of adolescents have been outlined and appropriate responses from caring adults advocated by numerous educators and researchers in the field, first as a direct focus on one or the other of the major systems, later complemented by the work of those who emphasized the interactions with other systems of development. For example, Tanner (1972, 1981, 1990) focused on the sequence, tempo and individual variation in physical growth, while Brooks-Gunn and Petersen (1984) focused on the cognitive and social repercussions of the physical growth and change aspects of puberty in adolescent girls. Some delineated the pathway to cognitive maturation via formal operational thinking (Piaget, 1972; Arlin, 1975; Case, 1985), while Elkind (1984) examined the effect of this level of thinking on the adolescent's social perceptions and relationship to peer and family. The task of establishing one's identity, brought about as an outcome of a series of conflict resolution tasks which balance one's relationship with increasingly broader segments of society, was specifically relegated to the adolescent period as delineated by Erikson (1968); others focusing on identity formation as a critical task for the

adolescent expanded the view of this period to show how (a) the process differs depending upon the input from significant others (Marcia, 1980) and (b) learning how to belong and fit in requires creativity, differentiation and integration (Manaster & Powell, 1983).

Research designed to unravel the contribution or impact of the giftedness change sphere has been a fertile ground for a more general analysis of how to foster talent development, such as the work of Csikszentmihalyi, Rathunde and Whalen (1993) on the roots of success and failure among talented teenagers. Such explorations often begin with lists of the prominent needs of adolescents in general, needs that range from "opportunities to experience real independence" to "predictable space where one can safely explore acceptance and rejection by peers" (Buescher, 1985, p. 12). Buescher complements this list by elaborating the dynamic issues imposed on those needs because of giftedness, such as ownership of one's gifts as opposed to having adults signify and take over the directing of that gift's emergence; personal dissonance between one's performance and one's expectations; and the pressure of being pushed by others' expectations while pulled by one's more personal needs. Clark (1992) adds the need to establish personal values and philosophy and to explore reality structures by use of personal experience. And Betts and Knapp (1986, 1996) transformed those needs into a curricular model for meeting them through developing the Autonomous Learner Model.

As an adolescent, prioritizing one's focus on a particular sphere or systemic change is most often arbitrary, with the youth having to respond to the most salient or demanding factors in his or her immediate environment, whether that be familial understanding or lack of, or the availability of educational opportunities in their area of giftedness and competencies, or a particular culture's configuration of values. The juggling requires that attention be given to all spheres simultaneously, while giving specific attention to the individual spheres. The juggling becomes further complicated due to the volatility of each of the spheres, with each of these systems changing in nature and demand almost daily, if not even hourly during adolescence. Even so, some individuals are able, most often with the guidance and support of significant adults (Haensly, Lehmann, & Fessler, 1995; Haensly & Parsons,

1993; Masten, Best, & Garmezy, 1990; Weiner, 1985), to maximize their developmental accommodations in spheres that can respond more readily to management of resource acquisition and utilization, an attribute of resiliency (Masten, et al, 1991; Werner, 1995).

Cultural Diversity and Adolescence

The fifth change sphere, minority status, and in particular minority status as combined with giftedness has presented numerous dilemmas to both youth and educators, especially as the field of gifted education has struggled worldwide to arrive at a mutually acceptable definition of giftedness (see Gagne, 1995) and to understand the interface of giftedness with diverse cultures (Ford, 1994; Frasier & Passow, 1994; Frasier, Garcia, & Passow, 1995). As Ogbu states, "the ability of a core curriculum to increase the school performance of some minority groups will be limited because it does not address the nature of minority cultural diversity." (Ogbu, 1992, p.5).

What must be kept in mind is whether the will or commitment to express one's gifts and accommodate to the settings of the majority culture where opportunities are likely to abide also depends on whether these youth are part of the voluntary minority (those whose people moved voluntarily to the U.S.) or the involuntary minority (those brought into the country through slavery, conquest, or colonization, such as Black Americans, American Indians, or early Mexican-Americans in the Southwest). Voluntary minorities, according to Ogbu (1992), perceive cultural and language differences they encounter as challenges, as a problem they can solve and a barrier they must overcome to achieve the payoff which they perceive as desirable. On the other hand, "Involuntary minorities interpret the cultural and language differences as markers of their collective identity to be maintained, not as barriers to be overcome" (Ogbu, 1992, p. 10), consequently focusing on gifts more in keeping with their culture's unique practices and proven strengths, or denying gifts that might suggest acting White, thus separating themselves from their cultural identity.

Thus, while the voluntary minority appear *not* to lose their identity even though adopting behaviors and attitudes that promote school success and facilitate

development of their gifts in an enriching setting, the involuntary minority often appear to consider such adoption as capitulation and loss of both a collective and personal identity. It is clear that the change sphere of cultural identity and acculturation may have an even greater volatility than the other spheres and is likely to produce even more significant interactions with the other change spheres that the adolescent is attempting to juggle---biological maturation, transformation of learning processes, societal accommodation, and finally, the nature and expressability of one's giftedness!

When educators set clear expectations for gifted African American students to enhance their school competencies, identify allies in the African American community of leaders and families and connect with those allies, as well as allocate resources, just as is done for gifted students from the majority culture, schools are likely to be successful in nurturing African American giftedness (Ford, 1994). According to Ford, the key to such success appears to be empowerment of the gifted African American youth through conveying a sense of belonging and connectedness with the program, teachers and the curriculum. "Empowerment comes from having teachers who understand and respect cultural diversity, and who promote multiculturalism" (Ford, 1994, p.xvii). Clear expectations for enhancement of skills especially in math and science, connections and models from the minority culture, and allocation of resources leading to empowerment of these youth as they begin their journey through high school have been among the goals of Camp Planet Earth for both its African American and Hispanic participating youth.

Method

Sample

The minority youth of this study were participants in an environmental science program offered during a summer month through the collaborative efforts of the Academic Enhancement Center and the Geosciences College of a large southwestern university system. For each of the two years of this externally funded NSF environmental science camp, fifty Hispanic and Black eighth graders were recruited. They were selected on the basis of: (a) participation in a University Outreach program in one of six major metropolitan areas throughout the state

targeted for schools and school districts with high minority enrollment; (b) a minimum of 'B' average grades in their targeted school's coursework; (c) an application by the youth which included an essay expressing interest in exploring the environmental sciences; (d) letters of support from a science teacher and a parent; and (e) an interview with a committee of educators representing the sponsoring institution.

The specific objectives of this program have been to increase the number of underrepresented minority students who will become eligible for college admission, increase the commitment of these youth to stay actively involved in school during their high school years, generate interest in environmental science, and impart life success and academic skills through the camp experience. (See Haensly et al, 1995, for additional background about this program.)

Data Collection and Analysis

Data for the study reported here were obtained from several sources directly connected to the youth; e.g., thematic analysis of the students' 28 daily journal entries in which they were given prompts to facilitate reflection about their ongoing experience, as well as to promote writing and communication skills (Haensly, et al., 1995). In addition, career plots were constructed by each youth, once early in the program, and the second at the end of the camp. Standardized self-report measures of self concept (the Piers-Harris Children's Self Concept Scale, Piers, 1984), interaction style preference (the Myers-Briggs Type Indicator, Myers & Myers, 1985) and use of specific study strategies (the Learning and Study Strategies Inventory, or LASSIE-HS, Weinstein & Palmer, 1990) were administered prior to the camp experience and feedback given to the students when they arrived at the camp.

Relevant observations and comments will be extracted from the self report instruments described above, the participants' journals, tri-weekly camp evaluations of the youth by camp counselors, and post-camp interviews with the camp director and the staff member in charge of journal writing and activities coordination. The participants' career plots and the changes observed in them over the course of the camp serve as additional evidence of the juggling of change spheres we believed evident in these youth. Semi-structured interviews with the camp director and

with a central staff member, conducted at the end of the second year of the project were recorded, transcribed and submitted for member check by the interviewees according to the guidelines of naturalistic inquiry (Lincoln & Guba, 1985). After organization of the information in major categories, a second member check was conducted to ensure validity of the interpretations.

Triangulation was accomplished through confirmation using the different major sources of the data. Sources referenced where most relevant included (a) the *youth-reported* perceptions of experiences obtained through the thematic journal analyses by the *researchers*, (b) camp staff responses including the *director's* perceptions and the assigned camp *counselors'* thrice-weekly evaluations of each student's progress and expressed attitudes, and (c) the self-report data on self concept, style preference and study skills' expertise. Additional analyses and summaries of the data are included in the 1994 and 1995 NSF Mid-Year and Final Reports on Summer Science Camps - SSC- Program (Sturdivant, Giardino, Paris, & Valdes, 1994, 1995) and in other manuscripts (Haensly, et al, 1995; Haensly, Lehmann, Paris, & Fessler, in preparation).

Results

In order to illustrate the central theme of this manuscript, that is, how giftedness can be nurtured through acknowledging the volatile nature of developmental tasks youth of this age must undertake, selected pieces will be excerpted from the extensive data set gathered over the two-year course of its existence. The manner in which highly able minority youth at CPE have addressed the tasks of emerging adolescence and the activities their program planners, directors and staff directed in order to nurture the giftedness of these youth through teaching and personal guidance, will be addressed by focusing on each of the change spheres in turn.

The Biological Maturation Sphere

Although as might be expected, none of the stated objectives for this program (Sturdivant, et al., 1995) directly included aspects of biological maturation. Indirectly, however, the nature of this co-educational camp experience during a month long residency---two to three weeks of it in the wilderness of a distant state---

and the philosophy of the camp staff to serve as family away from home during this time, inevitably resulted in attendance to the nuances of physical development and self concept. As well, one of the seven objectives included building self-esteem, with opportunities designed to develop assertiveness, confidence and rewarding lifestyles.

One of the major orientation activities to the camp experience included outdoor opening games of familiar sports and then an entire day in a nearby out of doors setting at a structured Ropes Course, the setting for Outward Bound challenge activities. The purpose of the Ropes Course, conducted in this case by the university's Outdoor Recreation Department, is to build team skills and develop mutual trust while challenging participants to attempt difficult physical feats. The physical tasks are designed to elicit obvious and untapped strengths, agility and skills, to highlight dependence on one's teammates while engaged in these activities, and to contribute a sense of accomplishment for attempting even if not able to complete some of the especially difficult ones.

Writing a letter to a friend about this challenging experience (one of the campers' early journal prompts) elicited from these youth detailed descriptions and enthusiastic comments. These included drawings to explain the games and the trust activities to their friends, and seemed especially focused on illustrating the personal challenge-situations that had been planned for them. Each saw the experience from a different perspective and different components had different degrees of impact on them. Not only were they quite specific about their descriptions, they also were very articulate about their awareness regarding the purpose of these activities. It became obvious that these youth were quite capable of analyzing their own feelings and seeing the value of different types of activities. It was also obvious that the camp staff were doing a superb job of conveying purpose and meaning for them while facilitating an enjoyable experience, as the campers repeatedly remarked, despite the hot and steamy weather, about how much fun they had had.

While fun with these activities was often expressed in the contemporary phrases of adolescents, as would be expected in writing to a friend, their enjoyment was also described thoughtfully and sometimes in literary terms. For example, one

entry stated "I floated [down to the trapeze] like Peter P. . . feel the adrenaline rush. . . the free falling through the air was the greatest feeling I've ever had." Their responses make us see how important it is to provide natural opportunities for exhilaration as was done here, opportunities that might otherwise be sought through drugs and alcohol, as we know has often been the case for many youth while attempting to understand and deal with their biological maturation.

One youth said, in thinking about one of the personal challenge situations (a type of response also expressed by at least 19 students), "I couldn't bring myself to do this, mainly because of my fear of heights. However, I had achieved what I believed had been their main goal [that is, the camp planners' goal], to increase confidence through learning to trust my group members in earlier activities. The important aspects of the course were that we **learned to trust and cooperate with fellow group members to reach a common goal**, while becoming acquainted with each other, and enjoy ourselves." This comment and other campers' entries reflected the themes of development of trust (27 of the entries), making friends and meeting other people (18 entries), developing cooperative teamwork while giving each other support (at least 15 entries), and expression of fears about participating in some of the more physically challenging activities without having these fears be labeled as failure (at least 10 entries). As one youth said "we played this game in groups so that we wouldn't have lost individually; we lost 2 times out of 10; now I really know why the challenge course got it's name... This really was scary! In all I'm really glad that we came to the challenge course."

Challenge was apparently a powerfully moving concept to all of them, as it was included consistently throughout this day's journal entries and in several other days' entries. The campers' personal responses to the different activities, though varying widely, left them with a strong positive attitude about themselves. This is summarized especially well by the youth who said "I couldn't make it [swinging successfully from the high tree-top perch to the trapeze,] but the thought of having courage and challenging myself made me feel that I can do anything I set my heart on!" This was said by one who has already set her career goal as becoming a lawyer, judge and eventually appointed to the Supreme Court. Her entering overall

concept of self on the Piers Harris fell reasonably at the 74th percentile, along with her quite self critical assessment of her current study skills on the LASSIE-HS. Her ratings by the staff during Camp Planet Earth were quite average; however, in the field, staff commented that she had done extremely well especially when conducting geoscience field tests. We can begin to see how the biological change sphere may interface with other spheres, such as the learning process sphere and the psychosocial sphere, and even with the giftedness or ability sphere. An obvious intent by the camp planners to respond to the giftedness sphere or to focus only on developing math and science expertise might well have circumvented this valuable contribution of the biological maturation sphere to other spheres of development.

Later, in the third week of CPE, now in the San Juan National Forest, camping became necessary to support the field work in geosciences in which they were engaged. These youth, many of whom had never camped or been away from their urban settings, found they "learned skills that will help me in the future", adding "the most important skills of camping. . . helping to pitch the tent!" Hiking was described in detail in 25 of the journal entries, with "It was fun and difficult" reflecting most of the entries. "At first I was scared but then I got myself together and with the encouragement of others I was able to climb like a great world famous mountain climber." The altitude made most of them tired enough to seek a nap before and after they returned from hiking. "As we were going hiking, I felt as if I was dreaming. The scenery was so beautiful. I saw a beaver dam, chipmunks, and many interesting sights. I wish we could stay for at least 3 days." A few described a special experience of fishing; in the entry just cited, she went on to say "I liked making our own fishing poles and finding our bait", even though there seemed to be "no fish in the stream." She concluded "This was my first time camping and it won't be the last!" Consideration of the cultural background and urban experience limitations of these youth suggests that the sphere of development these events and responses best fit, though superficially oriented to biological maturation, included psychosocial needs and even learning process needs. The latter are both particularly enhanced by this process of reflection, evaluation, and communication elicited through the planned journal writing.

To create an appetite for this kind of experience and this kind of setting, to be experienced in contrast to inner city, gang activities, although not a stated objective for Camp Planet Earth, emerged serendipitously. There was not one entry that didn't describe the ways in which this camping experience had touched them deeply, making them want to repeat it. As one said, "I feel that everyone should have a chance to experience what I experienced. It was great just thinking about how close to nature we were and how far we can go to having a great time. . . 24 hours are not enough for camping where we were. ." All of these experiences appeared to generate interest in the contextual setting for environmental science, while enhancing their attention to and development of knowledge and skills for the geosciences and academic aspects of CPE!

Verification of the contribution of the camp experience to their biological maturation might be found in the results of the second administration of the Piers Harris Self Concept Scale when they returned to their Outreach Centers, shortly before the beginning of the new school year. For example, of the 1994 group of campers, 25, or 54% of them indicated an increase on the physical dimension (subscale) of the Piers Harris. While the manual for this instrument reminds us that the single most reliable measure and the one with the best research support is the total score, its test-retest reliability for total score compares favorably with other such instruments, and the total self-concept scores reflected similar gains. Among this group, 87.5% of them showed an increase in their total self-concept scores, with all of the Black youth doing so, and the Hispanic males least likely to exhibit an increase. One can not exclude the halo effect of the camp experience, nor the possible cultural contribution, nor the effect of the social aspects of attempted and/or failed boy-girl relationships on their physical self concept over the four weeks of this camp. For example, saying positive things about oneself is disapproved by some cultures as boasting (as might have been the case for the Hispanic youth at CPE; and defensiveness about self may be stronger in other minority groups, resulting in spuriously high scores (as might have been the case for the Black youth at CPE).

The Learning Process Sphere

The second day's journal-writing prompt---"Describe how you felt on a day to day basis as a student in your school"---sought reflection on the participants' prior school experience in order to set this new experience into perspective and to provide participants with a yardstick for assessing it. The maturity of this group of rising ninth grade students from throughout the state was impressive and it speaks well for the many teachers and schools who do help many of our youth in their quest for responsible careers and lives. Most of the students had quite positive comments to make about their school experience. They were articulate about the pros and cons, relating in very logically sound statements the positive and negative aspects of classes, teachers and personal relationship concerns. These students expected to learn in school, respected teachers who had high expectations for them and challenged them, and, with significant insight, related bouts of boredom to instruction paced too slowly or presented in too dull a fashion, much like the high-potential middle school students described by Plucker and McIntire in analyzing academic survivability (1996).

Academic Strengths and Needs. Major insights by these youth emerged in response to a journal prompt of "Describe one of your academic strengths that you have used during CPE. Describe an academic characteristic that you may want to further develop while you are at CPE." These insights included the fact that these youth knew quite specifically what strengths they possessed relative to school success and usually related those strengths to what they liked doing. At least 58% of the 45 youth who remained at the 1995 camp had a belief that the domains of math and science were their strong areas, while 20% perceived specific learning process strategies as their academic strengths, e.g., "my reasoning skills --an important tool" as he went on to elaborate and cite Newton, Yin and Yang philosophy, and other decision making rubrics. Some mentioned leadership skills, others listening and communication skills.

Applying important metacognitive awareness, the skills they targeted as needing improvement included "taking notes. . . so I can use them and understand them when I need them", "reading and writing because I do both of them slow and

am always the last person", "develop my English. . . I have a little trouble in English". While math was a strong suit among 16 (36%) of this group, 11 males and 5 females, at least six of these youth identified other academic areas they wanted to improve and two even identified their social behavior as needing work.

One student mused about his unfortunate school experience with science (which he like "a lot") in classes where he said others didn't care about science "and thought I was a nerd". While he said he didn't care about what they thought, he conveyed that his withdrawal behavior seemed to get him in trouble with his teacher at that school. Some camp staff too found him withdrawn and timid, giving him low ratings on alertness, self concept and sociability. Yet, other camp staff gave him high ratings. It becomes increasingly apparent that, if ability and interest are to be nurtured, great care must be taken to create safe environments for youth for self expression of ability and interest, and to avoid judgments of a youth's quiet reserve as a lack of interest and ability.

Boredom: Barrier to Learning. While recognizing the importance of school, the pervasive presence of the extremes of boredom was expressed thus: "At school I usually feel bored; most of my teachers were always talking. There was one teacher, my science teacher, who made everything fun and tactile. . ." She added, with a pessimistic comment on the reality of schools, "I may be bored but I know it's something I have to do. . . I feel privileged to go to school because some people don't even get the opportunity. . . I think education is important to get me where I want to be so I try my best to grin and deal with it. . . school could use a good make-over." The credibility of this student's reality vision about school was affirmed by ratings counselors gave to her participation during the camp experience. She received high ratings (4's and 5's) throughout Camp Planet Earth for her "intellectual alertness", "leadership", "academics" and "social self-concept and her sociability", with the counselors added commentary "she was willing to venture and try to solve or answer any questions."

Another student, speaking specifically about how she has dealt creatively with non challenging schoolwork, said, "I felt so glad that I had a library with a

variety of books that I enjoyed. [when work became too boringly repetitive] I would check out books to enrich my vocabulary"

School: A Place for Learning. On the positive side of school experiences, one participant stated "my whole feeling towards school was this is probably the last time I am going to hear this, I better listen now." Another said, "I feel a sense of pride knowing I am one of 80 of the top students in Dallas... [he stated he was one of 80 eighth graders in the entire city to be in the talented and gifted program]... I have wonder-full [sic] teachers that make coming to school 5 days a week fun." Another stated, "I have felt academically advanced because I like to learn. . . I tried to do what was right, I stood up for what I believed in, and I was very outgoing and involved in everything, but most important I always try to help others."

Summarizing in a quite representative fashion the responses of this group of students, one concluded her entry by saying "I felt that my primary objective, to learn, understand, and achieve at my best was supported." Such responses indicate that teachers and schools in some places and in some times are nurturing giftedness, not only in academic work, but also in the personal attitudes that it takes to develop one's intellect. Another example of the participants' pride in their accomplishments and efforts (as well as in being chosen for the camp, mentioned in about 10% of the entries), was the jubilant statement: "if I want a good future I must want it and do it myself. . . I feel like a fictional superhero (Batman) because there is so much I have not yet experienced here. I feel like I'm on top of the world." Summarizing well for all the students, one said "The first day of Camp Planet Earth has been good. I learned that there are many smart people out there. It make me feel very proud of myself and it made me think of all the things I have accomplished in my life. To sum it up, I think I'm going to love Camp Planet Earth!" Nevertheless, the entries often demonstrated remarkable humble reflection for a "novice" adolescent. The opening orientation remarks by the camp staff generated the following response from one youth, "also has let me know a few things I didn't know before I came, like the smartest person in the world is someone who realizes that there is always something to be learned." Of this group of campers, 48% of them showed an

increase in the Intellectual subscale scores of the Piers Harris Self Concept Scale at the post-camp administration, while only 15% of them reflected a decrease.

Addressing the learning needs. The CPE youth were quite specific about what made science class back at their school enjoyable and why. Their journal entries made it clear that what fostered and facilitated their interest and skill in science was participatory hands-on experiences, challenge to think about complex problems so that they thought they were learning important ideas (even when completion grades were not always 'A's), and times when their teachers were themselves excited about the fun aspects of science. They expressed in various ways how frustrating it was for them when their science teachers "spent most of their time telling us information", assigning or requiring endless notetaking, or had them doing trivial tasks. Their perception of learning seemed to be closely tied to fun and personal relevance, as conveyed by this quite typical comment from one camper, "Mr. Findley taught us a lot but he was so weird and funny that we had a great time."

The philosophy of the major geosciences faculty at the camp was to teach these neophytes to the field as if they were college undergraduates who simply did not have background in the field. As the camp director stated, "Not like their high school teachers who fed them little pieces at a time. At first they were overwhelmed, but then they found they liked having that challenge. They began to realize that they could go back to school and succeed, they could handle tough ideas and academics." The youth themselves were consistently positive in their assessment of how skills and knowledge were being taught, even referring to "systems of knowledge" with connections between the field work and how they might approach such studies as algebra when they returned to their regular classrooms.

As stated in the Sturdivant, et al (1995) Annual Progress Report for Year 2 of CPE, "The individualized, personal attention in a setting different from the regular school setting was the most successful aspect of the SSC project in creating access to, supporting and retaining participants in the educational pipeline. Central to the impact of the summer camp experience appeared to be the type of hands on involvement in field research experiences designed by the camp staff, providing a

sharp contrast with their school classroom and laboratory experiences. As well, the continued individual attention of the University Outreach staff as they visit with the students in their school setting must be considered an integral component for support and retention." (p.17). Further, "As of September 1995, . . . of the 22 students for whom data are available, 14 (64%) were enrolled in science and/or mathematics courses designated as honors, gifted and talented, advanced, etc." (p.18)

Career Aspirations and Visions. Plotting a career path through the use of a futures scenario (imaging their twenty-five year high school class reunion), these youth revealed very specific aspirations, often very other-centered occupations with philanthropic goals. They also were quite practical in their plans of action, e.g., a future engineer wrote, "I'm going to take as many math classes that I possibly can and do my best to excell in each. . . By keeping my grades and GPA high in all of my classes, I can have a chance to be valedictorian---which is one of my main goals---and will probably have to be accepted at the college of my choice. There I will begin my engineering classes."

Among this group of 45 youth, 13 (29%, 10 males, 3 females) indicated on their early career plot some aspect of engineering as a possible career choice, with 3 of them changing their mind by the end of camp and the second plot. Sixteen (8 males and 8 females) mentioned the medical field on their first career plot, with 13 of these remaining firm in their goal by the end of camp. Specific fields of practice were delineated by most, such as brain surgeon, pediatrics, neonatologist (because a neonatologist was the reason she had stayed alive), with intensity of goal expressed by such statements as "lifelong dream" or "I've wanted to be a doctor for as long as I can remember!" A lingering, perhaps self-imposed gender bias was reflected by one female who stated "I might even become a doctor". Surprisingly perhaps since this was a science oriented camp, fine arts career choices were indicated by eight of these youth, law or police work and teaching were selected by others, business and athletics by five of the campers.

Those who chose engineering careers more often saw the rewards as "monetary and a rich lifestyle", while the medical, law and teaching career aspirants described awards received for alleviating human distress and making a better world,

"making life better for my people" said one. This latter theme was expressed by many entries, reflecting it would seem their identification with their roots in their cultural origin and its current problems. The rewards they envisioned receiving were frequently focused on the quality of effort they had expended, "for being the hardest worker in my profession", "never messing up on a project"; said one, "I think by working really hard on something you are dedicated to you can reach your goals. If I study hard I can be whatever I want to be." They also envisioned extraordinary creative contributions, "saving someone's life and finding a cure. . . maybe even for AIDS", "discovering new vaccines. . . new knowledge in DNA", "inventing a new engineering technique".

What might the camp have contributed to these visionary career goals? Individual conversations and group discussions with camp staff undoubtedly helped shape at least some of their career goals and plans. As reported by Lee (1994), high aspirations and impressive future-self images is quite a reasonable and tentatively supported outcome of close association with significant adults serving as mentors. Said an engineering male aspirant who was consistently rated by camp staff as academically outstanding, "Everything I have, I would have earned it by attending camps, such as the one called Camp Planet Earth." A female whose aspiration was consistently described by her as becoming a pediatrician, not only in her career plot, but in other entries as well, said in her final journal entry, "I just want to thank everyone here at the camp for making this summer one of my best and most memorable one yet." Strangely enough, camp counselors frequently rated her participation as weakly interactive with her group. We may need to be more sensitive to Hispanic cultural norms with regard to assertiveness and outward expressions of self, and what we as adults regard as necessary social behaviors.

The Social Needs Sphere

In the students' individual journal entries describing how the first day of Camp Planet Earth made them as one of the campers feel, ten themes emerged. The first three were expressed by almost every student. The most frequent theme was a particularly outstanding and thoughtful sense of social need among these adolescents. This theme had to do with the importance and excitement of meeting

new people from all over the state and making friends. Sometimes the writer just rejoiced in the opportunity, while others made statements regarding how this opportunity would help them---become less shy, learn how to make friends and so forth.

The social nature of this group of youth is not especially surprising when one looks at their responses to one of the pre-camp self-report instruments they were administered, the Meyers-Briggs Type Indicator. Interest in interacting with people and the contribution of this trait to their individual personality style was supported by their entry data on this instrument. Of the original 50 students accepted for the 1994 Camp Planet Earth , 80% of them (40 students) indicated a preference for an extraversion focus over an introversion focus. The 1995 participants showed similar preferences for the extraversion focus.

The second most frequent theme revolved around the importance of Camp Planet Earth as an experience that would be fun and enjoyable. In some cases it seems that participants feared that the camp would not be fun and in other cases they exhibited surprise that it was already looking like fun based on the activities they had encountered on Day One. One even interjected an important social concept by stating that the camp has made her feel "I can have fun without doing bad things!" As a critical commentary on how education often seems lacking in zest for many youth, along with a reflection of the fourth most frequent theme, appreciation for the counselors, one youth wrote "Camp Planet Earth is a wonderful, creative and enjoyable experience. It's not only educating me but it does it in a fun way that actually works. . . most teachers try but I guess it's not the same. I don't see the staff [i.e., at CPE] as teachers. I see them as friends that know more than I do and are willing to teach me without it seeming mandatory. . . Most of the staff members I guess are like me. And that is what I enjoy."

A third most frequent theme related most directly to the journal prompt. It included a variety of expressions from simply "feeling good about myself" to "Camp Planet Earth has made me feel that you have the ability to do something great if you put your mind to it", as well as numerous references to relishing the opportunity to become more independent.

The students with only a couple of exceptions found the outdoor opening games and the challenge activities fun, exciting, challenging and yet reassuring in helping them see that they could trust one another (theme #4) and that working together (theme #5) enhanced their interdependence. References to how important the welcome of the staff was on their first day on the university campus (theme #6) were inserted throughout the journal entries---"unexplainably, I felt more at ease with strangers in the outdoors [referring to the orientation activities] than with my friends in the city." A most graphic and poignant comment stated "I went to the challenge course thinking Oh Lord I'm the biggest thing out here--- I hope I don't do anything to embarrass [sic] myself because I already have a bad knee. But nobody really cared, everybody was very optimistic, opened minded and understand . And we had a good time. I learned to help people and let people help me."

While many think of early adolescence as a time that most youth would prefer to be anyplace but home, this was not the case for this group. Although only ten percent of the students openly expressed worry or fear about this new experience (theme #7), others indirectly developed a theme of concern about their own inadequacies (theme #8). A few rejoiced in the freedom to reach independence away from what seemed like smothering familial assistance, but most who commented about family (about one fourth of the students) expressed concern over being away from the protection and guidance of family members. Despite a frequent perception of Black youth having insufficient family attention, these youth expressed great attachment to their families. An especially vivid and thoughtfully sophisticated (for this age group) expression of that idea was worded, "I have however found myself wondering if I am in fact going to be able to enjoy the following month. . . Furthermore, this is the first time that I have been away from any relatives for an entire month. In spite of my doubts I hope to adjust to doing new things with new people over the next several days." This entry ended with "... look forward to learning and developing new skills and ideas."

References to what could be learned at Camp Planet Earth (theme # 9) were made in 50% of the students' entries and ranged from learning about what it would be like to live in a dorm to learning more about the environment. The tenth most

frequent theme was pride in being chosen for the camp (in about 10% of the entries), described earlier in comments about ability.

In analyzing the journal writings it was consistently evident that the students had taken seriously their assigned task to record their ideas and feelings in daily journal writings. They wrote in a spontaneous fashion, as befits journal keeping. Yet, there was an impressive manifestation of syntax and grammar consideration, to the extent of commas setting off explanatory phrases, even though misspells occurred at times. In using quotes to illustrate points, we have retained the original form to convey both the spontaneity and sincerity of what they wrote, not to embarrass. Directions to the youth for keeping a journal, the writing prompts used, the questions of privacy and eventual anonymity if the prompts were reported, and expectations for the students' compliance with the task are described elsewhere (Sturdivant, et al, 1994).

The Giftedness Sphere and the Cultural Identity Sphere

In Buescher's description of change spheres (1985), he describes five issues of the dynamics of giftedness in adolescence. They include ownership (who says I'm gifted?), dissonance (recurrent tension between my performance and my own expectations), risk-taking, others' expectations, impatience, and identity (what counts is who I am now). The critical inclusion of challenge within any curriculum for high potential youth has also been demonstrated (Haensly, et al, 1995; Plucker & McIntire, 1996).

The self-identity of these youth in regard to their ability has already been referenced under the previous categories, so will only be addressed briefly here. Themes of ownership of their giftedness did not seem to surface as they knew they had not only been selected for the camp, they had initiated the application and had had the support of the Outreach Center directors and their families to be at this camp. Indirectly their comments frequently reflected a matter of factness about their abilities, although they often expressed concern about how they might fare as they made the transition into a high school setting. Their expectations of who they would become, who they are now in regard to their ability, seemed firmly embedded in visionary dreams. These dreams may not have arrived at camp full blown, but

are quite likely to have been reinforced by the camp's activities and the camp staff's dialogue with them and expectations for them. Risk-taking was required first of all by many of them to come for such a length of time away from home settings they missed--including the familiarity of home food, often an especially sharp distinction made by these youth when they encountered the cafeteria or camping meals. Risk-taking was required by the activities planned, not only the physical ones embedded in the Challenge Course and camping in the rugged mountains, but also the science hands-on activities where they were expected to involve themselves whole heartedly.

In what ways did the camp staff specifically address their giftedness, that is, beyond expectations and opportunities for each to be valued for their responses to these activities, from water hydrology to math as an analysis tool in science? Although the geosciences curriculum dealt mainly with the major geoscience concepts and research tools (Sturdivant, et al. , 1995), the response to special ability is captured in part by a philosophical position described by the camp director. "We used a Backwards Vision concept" explaining this as "When you're looking back, it will feel so good you came through it! . . I remember when we were marching knee deep through the snow up to Craig Crest, and then when we got up to the top, the kids were just in awe of what they were seeing all around them, and in awe of the fact that they had really gotten themselves up there even though it was so difficult for many of them to do---especially some of those who weren't really prepared for that level of physical challenge. I don't think any of them will ever forget how they felt at that moment! Or how we felt watching them watch where they were and where they had come!" He spoke of wanting them to see the vision of geoscience in that way. He talked about not specifically teaching them strategies like an academic algorithm, but modeling strategies, guiding their practice of them, and then getting these youth to reflect back on how far they've come. He emphasized always trying to make them independent---"It became a kind of power transfer". Who can doubt the visionary ability of the youth as expressed in their career plots when such gifted directors with such vision were guiding them?!

As for the cultural identity sphere, the camp was designed to permit them this experience with others of their minority group. Although resistance to affirmative action programs has brought this program to an end for fear of litigation, it is quite obvious that this month together in the challenging, backwards vision setting described, must influence positively for these youth the retention of cultural identity while nurturing the academic and social skills to make the system work for them, cited as essential by Ford (1994) and Ogbu (1992). The camp director spoke of the staff as being "institutional parents" during this month long interlude, staying with them until crises that arose were resolved. Many of the youth arrived with the gang perspective well in mind and practice; they were immediately informed that any incidents derived from this perspective would serve notice for them to be dismissed from the camp and sent home. The Challenge Course (as the youth all referred to the Ropes Course) immediately reinforced the team and trust elements that would become the watchwords of the entire month together. And the youth consistently reflected these ideas of building trust and the value of teamwork in their journal entries.

Maintenance and Transfer

Nurturing giftedness while minority adolescents juggle change spheres, in retrospect, conveys most vividly the conduct of the camp experience, the effects observed in the youth then and as they went back to their home setting, and the impact of the camp directors and staff. Social interaction skills and learning process strategies learned in the context of minority culture peers interacting with caring minority and majority culture adults, we propose, will have higher probability for maintenance and transfer to their integrated high school settings, than had they not experienced CPE. How long these effects will remain for these youth will require a longitudinal study, another look at their lives in ten or twenty years. It would seem that all the right pieces were here and that these youth indeed have promise of making the transition from gifted minority adolescents to gifted adults, citizens of the world.

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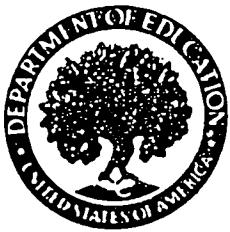
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